What is claimed is:

1. In a process for producing a high temperature stable fiber composite ceramic by chemical vapor infiltration (CVI) with a silicon carbide precursor in a suitable carrier gas on carbon fiber preforms or silicon carbide fiber preforms, the process further comprising the step of adjusting the process pressure to $\geq$ 0.6 bar absolute and of adjusting the process temperature to $\geq$ 1100°C.

2. The process according to claim 1, wherein the process pressure is adjusted to between 0.6 bar absolute and 1.25 bar absolute and the process temperature is adjusted to between 1100°C and 1200°C.

3. The process according to claim 1, wherein the silicon carbide precursor is selected from chloro(alkyl)silanes.

4. The process according to claim 1, wherein methyltrichlorosilane (MTS) in hydrogen (H_2) as carrier gas is used for silicon carbide deposition.

5. The process according to claim 1, wherein a partial pressure ratio of hydrogen to methyltrichlorosilane between 4 and 8 is adjusted.

6. The process according to claim 1, wherein a heat-resistant material with a large surface is arranged between the gas feed in the reaction space and the fiber scrims to be infiltrated for preconditioning the process gas.

7. The process according to claim 6, wherein the heat-resistant material with a large surface is a carbon fiber felt.

8. The process according to claim 1, wherein carbon fiber scrims are used.

9. The process according to claim 1, wherein a residual porosity of from 12 to 14 volume percent is adjusted.

10. The process according to claim 1, wherein the carbon fiber preforms or silicon carbide fiber preforms are generated in that fiber layers are first constructed, the fiber layers are fixed one above the other at a distance from one another by binders, possibly accompanied by simultaneous molding and stabilization of the preform approximating the desired end product.

11. The process according to claim 10, wherein the fiber layers are generated with a 0°/90° laying angle.

12. The process according to claim 10, wherein the binder is selected from organic and/or silicon-organic polymer resins.

13. Structural component parts, particularly for aircraft and spacecraft, produced according to the process of claim 1.

14. Structural component parts for control flaps, leading edges of blades, nose cones, control rudders or heat protection paneling for orbital gliders and hypersonic aircraft produced according to the process of claim1.